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MCB CAMP LEJUENE  
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U S NAVY RESPONSE TO REGULATOR COMMENTS ON DRAFT CORRECTIVE  
MEASURES STUDY REPORT JULY 2007 SOLID WASTE MANAGEMENT UNIT 360 (SWMU  
360) MCB CAMP LEJEUNE NC  
9/13/2007  
CH2M HILL

# Response to Comments, NC DENR

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## SWMU 360 Draft Corrective Measures Study Report, July, 2007

Randy McElveen, 9/13/2007

### Specific Comments

1. Based on Section ES.2 of the Study and as stated in other sections of the Study the horizontal and vertical plume delineation should be completed prior to implementing the preferred CMS alternative.

*Response: MCB Camp Lejeune plans to complete this delineation during the Interim Measures source remediation.*

2. Please correct this typographical error. As you know, aerobic bioremediation does not stimulate anaerobic reductive dechlorination but oxidation of contaminants. This technology was not retained as indicated on page 3 of Table 3-1 and was not used at Site 82 or 89.

*Response: The typographical error in the table will be corrected. Although aerobic bioremediation is not applicable for treatment of PCE, it may be appropriate for treatment of daughter products. Aerobic bioremediation will be indirectly retained as part of the air sparge option.*

3. The comment column of Table 3-1 at the bottom of page 7, Chemical Oxidation under the "Remedial Technology Type" column attributes the chemical oxidation results at Site 35 to biological activity indirectly stimulated by the injections. Aerobic Bio-remediation would not occur in this area as quickly as the contaminants were degraded at Site 35. It's more likely that the contaminants were stripped by the extreme movement in the aquifer as documented in the field or the H<sub>2</sub>O<sub>2</sub> was reaching the contaminants but concentration decreases were not being documented until the high concentrations were re-absorbed in the organic matter after equilibrium returned to the aquifer. A combination of all three mechanisms was most likely accountable for the concentration decreases.

*Response: In general, we agree. We propose to remove the discussion of Site 35 in this table because it adds little value to the table. We will also limit the discussions of Site 35 in Section 4.4.3.2 and in the Conclusions. See attached edited pages.*

4. Table 3-1, Oxidation Technology Type. We have not seen a successful Permanganate remedy at Camp Lejeune. Due to the high Natural Oxidant Demand (NOD) at Camp Lejeune, permanganate is not recommended as a remedy in this region.

*Response: Permanganate was included as a third alternative, primarily to compare costs between technologies. CH2M HILL agrees that high NOD limits the effectiveness of*

*permanganate at Camp Lejeune. Activated persulfate is a possible alternative, although costs would be expected to be significant higher than biological substrate injections.*

5. Please remove the reference to “off-site” as used in Section 3.2 on page 3-2. The Plume defines the Site. A better way to discuss the issue in this section is by concentration or as the source area and downgradient/ upgradient of the source area or as the area outside of a certain concentration contour or the RGO concentration contour.

*Response: The term “off-site” will be changed to “downgradient”.*